

---

REFERENCE 1: Patent No. CN 2544374Y

**TITLE of UTILITY MODEL**

**Lamp string composed of lighting units having LED**

**ABSTRACT**

5 The present utility model provides a lamp string composed of lighting units having LED. Said utility model provides an inexpensive, easy-to-use, long-life advertisements means that facilitate the presentation of various advertising effects. It comprises a plurality of lighting units including LED that connected with each other; the lighting unit comprises a base having a slot formed therein, a circuit board provided in the slot of the base, and a covering plate that fits the slot of the base; at least one LED provided on the circuit  
10 board; the shape of the covering plate corresponds to the shape of the slot of the base, so as to completely covers the slot; round holes provided on the covering plate, said round holes corresponding to said LED on the circuit board.

15 **SPECIFIC MODE FOR CARRYING OUT THE UTILITY MODEL**

As depicted by Figure 1 and Figure 4, the present utility model comprises a plurality of lighting units 100 that having LEDs, a band of wires 40, a plurality of clips 41, a double side tape of an adhesive release paper 3 and a tape 1.

20 The lighting unit 100 comprises a base 10 having a slot formed therein, a circuit board 20, a covering plate 30 and adhesive 300 filling the base 10.

A plurality of positioning posts 11 are formed on the bottom of the slot of the base 10, said positioning posts 11 extending upward. An inner edge of a side wall of the base 10 is provided with a hollowed  
25 positing post 12 and two opposite U-shape gaps 13, said hollowed positioning post 12 is formed integrally thereon.

The circuit board 20 is provided with at least one LED 21, preferably three LEDs 21 emitting different colors; the circuit board 21 is also provided with a plurality of positioning holes 22 that corresponding to  
30 the positioning posts 11 on the base 10.

The shape of the covering plate corresponds to the shape of the slot of the base, so as to completely covers the slot; securing posts 31 are provided on the bottom of the covering plate 30 and extend downward, said  
35 securing posts 31 corresponds to the hollowed positioning posts 12 on the base 10; a plurality of round holes 32 that corresponding to the LED 21 on the circuit board 20 formed in the circuit board 20.

The circuit board 20 is located in the slot of the base 10, and said circuit board 20 is secured by fitting the

positioning holes 22 thereon onto each positioning posts 11. The covering plate 30 covers the slot of the base 10, and is secured by fitting said positioning posts 11 on the bottom thereof into the hollowed positioning posts 12 of the base 10.

- 5 The clips 41 are made of flexible materials and in a U-shape. A plurality of arced dents corresponding to the band of wires is provided on a side of the clip.

Upon assembly, a plurality of lighting units 100 is connected into a string of lamps. The band of wires connects a circuit board 20 of each lighting unit 100. The clips 41 buckle said band of wires 40, and band  
10 tightly by said plurality of arced dents on the side thereof. Then buckle the clips 41 onto the U-shape gaps of the base 10.

As illustrated in Figure 2, upon the assembly of the lighting units 100, secure the circuit board 20 by fitting the positioning holes 22 onto the positioning posts 11 on the base 10 firstly, then buckle the band of wires  
15 40 tightly by said clips 41, and buckle the clips 41 onto the U-shape gaps of the base 10 afterward.

As shown in Figure 3, upon the completion of assembling the circuit board 20, an adhesive filling machine fills adhesives 300 into the inside of the base 10. The adhesives are filled until completely enclosing the circuit board 20, so as to perform the function of water-proofing; upon the solidification of said adhesives  
20 300, insert the positioning posts 31 of the covering plate 30 into the hollowed positioning posts 12 of the base 10, so as to cover the slot of the base 10.

As shown in Figure 1 and Figure 4, after assembling said plurality of lighting units 100, further provides a double side tape 2 on the bottom of the base 10; then bond a tape 1 onto the side where providing release  
25 paper 3.

As illustrated in Figure 4, when applying the present utility model, since a plurality of lighting units 100 is bonded onto the tape 1, users may remove the release paper 3 of the double side tape 2 from the bottom of the base 10 by simply removing the tape 1, leaving only said double side tape 2 on the bottom of the base  
30 10.

As illustrated in Figure 5 and Figure 6, after the remove of the release paper 3, the item of the present utility model could be bended randomly into a specific shape. Since the double side tape 2 on the bottom of the base 10 is directly bonded the item, a lamp string representing a specific illumination is formed. For  
35 example, when applying the present utility model in a design of an advertising post, two groups of the present utility models forming the A-shape advertising font might be used.

As shown in Figure 7, when controlling a plurality of the present utility models in practice, the circuit

---

structure may adopt a single control 200 that connects a band of wires 40 of said plurality of the present utility model. The output signal of said control 200 determines whether the current conducting of each lighting unit 100 of the utility model, so as to control the turn on/ turn off of the lamp.

- 5 As set forth above, LEDs are used as the light source of the present utility model. In other words, there is no need to use a transformer to activate. Thus, a potential damage due to a high voltage is significantly reduced, in addition to decrease the power it consumes. Furthermore, LED lighting units are provided on a release tape in the present utility model, users may present said utility model in a specific shape according to a requirement. When applying in advertisement, the present utility model may add visual effects.